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ABSTRACT

A study compared the teaching methods of basal readers to writing/reading integration as they effect reading comprehension. Forty fourth-grade students from an urban area of New England completed the Reading Comprehension Subtest of the Comprehensive Test of Basic Skills (CTBS) for grade 3 as a pretest. A control group of 20 students were instructed throughout the entire fourth-grade year in reading solely with the HBJ Basal Reading Program. The experimental group of 20 students also completed the HBJ Basal Reading Program on the fourth-grade level but additionally were instructed in a wide range of writing activities based on trade books. Both groups were then given the fourth-grade Reading Comprehension Subtest of the CTBS after the nine-month period. The experimental group did not score significantly higher than the control group on the 45 multiple-choice responses based on a variety of comprehension questions. Analysis done with an independent t-test indicated that students who practiced and strengthened their comprehension skills by using writing activities displayed no difference in comprehension skills measured by a multiple-choice format. (Two tables of data are included, 15 references are attached, and appendixes containing statistical analysis, curriculum objectives, and basal reader scope and sequence are provided.) (Author/SR)

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The Effects of Directed Writing Activities On Reading Comprehension Performance

Rosanne Licari

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August, 1990

Running head: EFFECTS OF WRITING ACTIVITIES ON READING COMPREHENSION

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ABSTRACT

This study was designed to compare the teaching methods of basal readers to writing/reading integration as they effect reading comprehension. Forty fourth grade students, from an urban area of New England, completed the Reading Comprehension Subtest of the Comprehensive Test of Basic Skills for grade 3 as a pretest. Divided into two groups, a control group of 20 students were instructed the entire fourth grade year in reading with the sole use of the HBJ Basal Reading Program. The experimental group of 20 students also completed the HBJ Basal Reading Program on the fourth grade level but additionally were instructed in a wide range of writing activities based on trade books used in the classroom for the entire fourth grade year. Both groups were then given the fourth grade Reading Comprehension Subtest of the CTBS after the nine month period. The experimental group did not score significantly higher than the control group on the 45 multiple-choice responses based on a variety of Comprehension questions. There was no significant difference in this study because the students were not able to transfer the cognitive process from reading to writing activities versus the process of reading to decoding multiple-choice questions. The analysis, done with an independent t-test indicates that students who practiced and strengthened their comprehension skills by using writing activities displayed no difference in comprehension skills measured by a multiple-choice format. Recommendations for future research are presented.

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CHAPTER ONE

INTRODUCTION

Finding the most effective method to teach reading had blossomed into a highly controversial issue in the late nineteen eighties. Now entering the nineties, many school systems find themselves leery to put scarce dollars into a reading program which does not develop all aspects of reading skills. With the goal to clearify the components of the many teaching methods and settle the controversies, researchers have begun more focused studies to compare these methods. Although many researchers have studied the relationship between reading and writing, limited research has been done on the influences of writing activities on the development of reading comprehension (Stotsky 1983).

Two philosophies have been developed over the history of the reading/writing relationship: One supports writing activities as a factor to increasing reading comprehension (Doctorow, Wittrock, & Marks, 1978; Glover, Plake, Roberts, Zimmer & Palmere, 1981); the other advocates writing tasks have no effect on reading comprehension (Smith, Jensen, & Dillingofski, 1971 in Stotsky 1983, Oehlkers 1971 in Stotsky 1983).

In fact several studies conclude that various writing activities enhance retention of content material (Stotsky 1983,

Chall & Jacobs, 1983). Some of the writing tasks include: hierarchical summaries (Taylor and Beach, 1984 in Belanger 1987); sentence-combining practice (Combs 1977); summary writing (Head, Readence, & Buss, 1989); note taking and underlining critical information (Kulhavy, Dyer, & Silver, 1975). These studies all support the philosophy that some types of writing activities will increase reading comprehension.

Other research criticizes that comprehension scores may increase in students simply because of the enormous amount of writing would increase their reading practice since the two procedures are so closely linked (Belanger 1987). Additional research has been done using various grade levels as subjects. It was determined that the writing relationship with reading appears to have inconsistant characteristics at different grade levels (Shanahan 1984 and Barnes 1984 in Belanger 1987). These studies suggest that comprehension skills have a developmental process which would effect the results of other his orical studies.

It is the belief of many educators in the profession that reading comprehension can be taught solely with the use of a basal reading program. However, others have concluded, through their own experiments, that a combination of reading assignments along with writing activities, re-enforces comprehension skills. The conflict of opinion on the instruction of reading comprehension has prompted this study. This study included two classes of fourth grade students from an inner-city school district of Connecticut. The classes varied in instructional

methods of the reading curriculum. The experimental groups were tested with the reading comprehension subtest of the Comprehensive Test of Basic Skills (CTBS). The formal question for this research study is: Do fourth grade CTBS reading comprehension scores differ when students are taught with a basal reading program compared to those taught with an integrated reading and writing program?

Researchers have tried to determine the factors which increase reading comprehension for various reasons. Most importantly, implications of such research can alter curriculum developments in reading. Secondly, research findings can be used to guide publishers of basal reading programs for the most effective selections of teaching aids. Thirdly, researchers of reading instruction can alter teacher training programs to insure the proper preparation of future reading teachers.

The results of this study are intended to determine if there is a need to supplement a basal reading program with writing activities. It is suggested that when writing is included as part of reading instruction, comprehension scores may be significantly higher than those who are not taught reading with writing integration.

CHAPTER TWO

LITERATURE REVIEW

Basal Readers

The first basal readers were introduced in the United States between 1836 and 1894. This program, named McGuffey Electric Readers, was considered an influential innovation to reading education. The McGuffey Readers were focused on vocabulary building based on reading selections with moralistic, patriotic, literary and religious themes. (Squire 1985)

By the 1920's, professional opinions changed the instruction programs of the basal oral reading approaches. For instance, articulation and pronunciation were the focus of educators, which stressed changes in the republishing of the basal reader. Little changes to date have been made in reading selection content.

During the period from 1931 to 1960, leaders in American reading instruction developed reforms to various programs. Gray and Gates, two of the influential leaders of this period, stressed new strategies for instruction of vocabulary such as word repetition and rigidly controlled vocabulary. New strategies also included changes in the content of stories depicting middle-class families and values. (Squire 1985)

During this time much criticism began to arise. One such

critique came in 1955 by Flesch, in Squire (1985). He urged phonics be introduced in early grades as part of reading instruction. Another critique was made in 1964 by Strickland, in Squire (1985). He argued the basal programs needed "sentence variety and literary quality". In the 1970's these two views were incorporated, and basal readers came out with new vocabulary focus and relaxed content controls. Until the early 1960's, the teaching of individual comprehension skills received insufficient focus compared to vocabulary and decoding skills. Many basal series taught comprehension through discussion questions rather than written activities used to teach decoding and vocabulary. During the 1960's comprehension skills nationally were very poor. (Squire 1985)

Additionally, by the 1960's, basal reading series were used nationally as the pervasive force in reading instruction. The basals promoted three reading group format was universally adopted in most classrooms. The three groups separated students into below, at, or above grade level readers. Also during this period, teachers relied solely on the basal readers to teach reading. (Otto, Wolf, & Eldridge, 1984)

During the 1970's and 1980's many criticisms were brought out as to using the basal programs to teach comprehension. Additionally the Center for the Study of Reading in 1981 demonstrated a need to reinforce comprehension with workbooks, in addition to the already popular vocabulary books. Writing activities were being focused on more intensely now to strengthen comprehension. In 1977, Jeanne Chall called for more use of

language processes to teach reading. Chall urged the use of more related writing activities in basal programs. (Squire 1985)

Today as basal programs are still the predominate means of reading instruction, comprehension skills nationally are still weak. Criticisms of the basal series continues to rage. Educators are beginning to look at alternatives to teaching reading both in addition to the basal readers and as a replacement to the basal readers.

Throughout the 1970's and 1980's many researchers worked on language processing strategies to enhance comprehension skills. Many of these writing activities could be used in addition to or as a replacement to the basal programs. Some of these studies will be discussed in the following section of this chapter.

Studies Examining the Effects of Writing on Comprehension

Since reading and writing are both language processes research has been proven there is a direct relationship between the two. However, this direct relationship does vary within the language process. For example, a large body of research has been completed to prove alternative methods to the development of reading skills. In contrast, little research has been done in reading to study the influences of writing on the reading process (Stolsky 1983). Here specifically the influences of directed writing activities on the development of reading comprehension will be discussed.

A study was conducted by Kulhavy, Dyer and Silver (1975) to

prove the effects of notetaking on learning text material. The study was conducted on a random sample of 144 junior and senior high school students. The students were assigned a 845 word narrative passage to read and study. The subjects were informed a test would be given on the material from the passage. Prior to reading, the high school students were divided into three groups: those who were instructed to take notes on major details, those who were instructed to under-line major details and those who were instructed to read and study.

Systematically, the students were given an unlimited amount of time to read the narrative and take notes, under-line or study the text. As the learners finished reading, the passages were collected and a multiple choice comprehension test was immediately administered. Again, no time limit was placed on their working time to complete the test.

The test results supported the researchers notion that notetaking increases what the learner remembers from the test. The notetakers scored a mean of 5.63 points higher than the under-liners and a 4.39 mean higher than the controlled study group. Additional data indicates the notetakers spent an increased amount of time studying compared to the other two groups. Significantly more time was spent on the passage information since notes were required. (Kulhavy, Dyer, & Silver, 1975)

Two years later in 1977, Warren E. Combs conducted a study on sentence- combining practices used to develop reading comprehension skills. Sentence-combining is explained by Combs as

a method to improve critical reading and writing skills. These exercises begin with a "kernal" sentence or thought. Next, other relative smaller kernals are listed. The students, beginning with the main kernal, add other listed kernals. They continuously use their linguistic intuition as a guide to write cohesive sentences.

Combs' study was done to determine if training and practice in sentence strategies would transfer to reading comprehension. Combs pretested two groups of subjects at the level of entering college (grade level 11-13) with the Rate and Comprehension Check Test of the Baldridge Reading Instruction Materials. After the pretest, students in the experimental group were instructed in sentence-combining practices aimed at increasing their abilities to handle complex syntactical structures. Following the experimental group's intervention a posttest was administered to both groups. The posttest was about the same in length as was the pretest, between 985 and 1,005 words.

Results of the study showed that the experimental group, after sentence-combining practices, made significant gains in reading comprehension scores. Combs found that syntactic difficulty in reading passages affects students' comprehension of those passages. Therefore, if students' abilities to handle more difficult syntax increases then they will score higher on more difficult passages in comprehension. (Combs 1977)

A third study, on the effects of writing activities on reading comprehension was done by Dortorow, Witthock and Marks, (1978). Doctorow et al used 488 subjects from Los Angeles

ranging in ages 10 to 12 years old. The students were placed into two ability groups, determined by the results of the Science Research Associates (SRA) Reading Placement Test scores. The low group would work with a 372 word passage from the lowest level of the SRA Power Builder Reading Laboratory Kit #B. The high group's passage was 1,125 words from the highest level of the same SRA kit. These two groups were divided into four control treatment groups. Each group was instructed on various methods of summarizing paragraph information. The methods are briefly as follows:

1. Group 1 was instructed to label the top of every paragraph in the story with a one or two retrieval cues.
2. Group 2 was instructed to generate and write an original sentence on every paragraph of the story.
3. Group 3 was instructed to combine a one word label with an originally written sentence.
4. Group 4 was instructed in neither paragraph headings nor generation sentences. Instead they were to read the same story as the experimental groups.

The procedure of the experiment lasted 3 days: day 1 - assignment of treatment, day 2 - reading passage with individual treatment, and day 3 - tests of comprehension and recall. The results of the Cloze Recall Test were analyzed as follows. Group 1, who used one word paragraph headings, scored higher than the control group (group 4). Similarly, group 2 who wrote original sentences to summarize events, increased processing of memories compared to the pretest scores. Logically then, group 3 who

combined both conditions scored the highest on the posttest and had the largest growth from the pretest. These results were consistent in both the high and low achievers, concluding both types of learners benefit from the same type of writing tasks to summarize narrative stories. In total, Doctorow et al (1978) conclude that the retrieval of relevant information condensed into one or two words and the generation of coherent summary sentences can increase reading comprehension and recall.

The following three studies deal with college students and their abilities to recall information. All three studies include other writing tasks tested by researchers on various groups of college students to enhance reading skills.

The first of these was done by Karl Taylor, (1978) using college freshman. This small study was done using 22 freshman from an English class at Illinois Central College. During a sixteen-week semester, the students were instructed in various types of summary skills. Additionally, they were assigned a total of eight papers to practice each of the following summarizing skills: narration, process, comparison/contrast, definition, summary, cause/effect, classification and problem/solution. The examiner analyzed two written summaries from each student; one early in the semester and the other towards the end of the semester. A maximum of six points were given for each test passage with a focus on accuracy and brevity. According to the pretest scores students had trouble summarizing written passages; responses were often incomplete, lengthy, wordy, and repetitious. In contrast, the posttest passages were

concise and accurate. All around scores were higher than the pretest scores in all eight areas. The mean scores illustrate the growth of a sixteen week semester: pretest mean of 3.3 compared to posttest mean of 4.7 (using a 6 point scale). The implications of this study suggest students are below proficient levels in summarization skills vital to recalling text information. It is suggested that these eight skills mentioned above be taught as an integral part of early subject-matter courses. (Taylor 1978)

The second of the three college studies deals with a variety of different writing tasks but concludes similar findings.

Glover, Plake, Roberts, Zimmer and Palmere (1981) used 152 undergraduate subjects to study paraphrasing and drawing inferences on memory recall. The 152 subjects were randomly placed in five groups via the receiving of a packet containing one of five various sets of directions to read an essay. The five group conditions and directions were as follows:

1. control condition directed to simply read the essay.
2. key word condition subjects were directed to list key words beside each paragraph.
3. model statements condition subjects were directed to use verbatim sentences, paraphrase sentences, logical extensions and logical conclusions (a definition was given for each along with a passage sample).
4. paraphrase condition subjects were directed to paraphrase each paragraph (a sample paragraph was given with an example of a paraphrase).

5. logical extension condition subjects were directed to write original extensions to the material content.

Each of the five groups worked on the assignments for 25 minutes. Upon completion, students were given a 15 minute period to complete a free recall test.

The test results varied greatly among the groups hence, the result discussion is lengthy, and does not completely correlate to this study. Therefore in summary, the results support that recall is a high level process of encoding information. The assignments requiring students to use more extensive processes, specifically paraphrasing condition subjects and the logical extension condition subjects, resulted in higher recall rates. Addition conclusions confer that an increase in task difficulty using more extensive processes resulted in higher levels of retention. Lastly concluded, the subjects who wrote key words and paraphrases also scored high. Thus from this perspective it can be summarized that subjects remembered more information when they provided their own cues. (Glover, Plake, Roberts, Zimmer & Palmero, 1981)

This third college study was done as a dissertation by Walker-Lewis (1981). The subjects of the study were 74 academically underprepared college students enrolled in a reading course. The subjects were divided into a control group, whose reading instruction consisted of traditional non-integrated methods, and an experimental group, whose instruction emphasized reading/writing strategies. The subjects wrote a total of six written responses to an investigator constructed reading

comprehension test. Various other tests were used to collect data on the subjects such as the Estes Scales to Measure Attitudes Toward Reading, Dale and Miller Instrument To Measure Writing Apprehension and The Sequential Test of Educational Progress (STEP) Test III.

As a result of the statistical analysis three distinct findings were made on the two groups. Firstly, the subjects' written responses varied greatly when measured by the investigator constructed comprehension test compared to the STEP test. Secondly, overall attitudes toward reading and writing increased in the subjects of the integrated reading and writing group. Thirdly, the researcher concluded that when writing was used in instruction the reading comprehension of academically underprepared college student increased. (Walker-Lewis 1981)

In 1983, Jeanne S. Chall and Vicki A. Jacobs completed another study which supports using writing as a developmental tool to strengthen reading. Specifically, Chall & Jacobs studied children of low socio-economic status (SES) for a growth period of one year in the areas of writing, language, and reading. The 30 SES students in grades 2, 4, and 6 were categorized as "above average" readers, with fifth and sixth stanines and "below average" readers, with third and fourth stanines. Both groups were monitored for a years growth or deceleration from grade two to three, grade four to five and grade six to seven.

The testing procedures varied between reading and writing. Reading assessment was done by an individually administered test. The battery scored six separate components of reading, one

including comprehension. Contrastly, the writing assessment was a group administered test. The test consisted of two writings, one on a narrative piece and the other on an expository stimulus; 10 minutes was allotted for each subtest. The writing samples were assessed on twelve various measurements. Two included syntactic organization and content measures, both of which were later related directly to reading comprehension.

The results of the study included various findings about SES students learning patterns of both growth and deceleration. The strong growth was found from the second to the third grade in the area of reading. Additionally, the greatest decline was noted in the grade six "below average" readers in both reading and writing. It was concluded that SES students drop further behind their grade expectation in all areas especially those of the "below average" reading groups.

In correlation to the reading findings, students with poor syntactic organization and content scores, on the writing test, scored low in reading comprehension. Chall and Jacobs conclude there is a definite need for more emphasis on writing since a strong link between writing development and both reading and language growths had been determined. (Chall & Jacobs, 1983)

Joe Belanger published a critical review of research in 1987 in which many studies on reading and writing were summarized and analyzed. The following are relevant to this study.

One pertinent study discussed by Belanger was done by Taylor and Beach (1984). Taylor and Beach found significant changes in reading and writing measures after teaching a hierarchical

summary procedure to a group of seventh grade social studies students. The experimental students were assessed in reading comprehension after reading a passage and writing a hierarchical summary about the passage. In contrast, the procedure of the control group was conventional in that the group read and reread the passage without writing on the passage. Both groups were then asked to complete questions on the same passage read. The group which wrote the hierarchical summaries scored significantly better than the control group on the recall test questions. (Taylor & Beach 1984, in Belanger, 1987)

Another related study from Belanger's publication (1987) was done by Braun and Gordon (1982) on the effects of writing narratives. The study was conducted with a fifth grade class over a period of 15 hours in a 5 week period. The experimental group received extra instructions in writing narratives compared to the control group who received traditional fifth grade instructions on narrative writing. On the comprehension subtest of a standardized reading test, the narrative writing group scored higher than the control group. (Braun & Gordon, 1982, in Belanger 1987)

Most recently in 1989 two separate studies were conducted on methods of strengthening reading comprehension. The first of these was completed by Matha Head, John Readence and Ray Buss on summary writing.

The study administered by Head et al (1989) was conducted with 49 seventh grade subjects. These students were of all average reading abilities, with stanine scores ranging from 4 to

7 with a mean of 5.2. Students were randomly assigned to either a control group or a treatment group which received instructions on summarizing skills. Following ten days of treatment both groups were given reading assignments from history text books to summarize. The passages were 576 words in length with a readability level of seventh grade on the Fry scale. Immediately following the reading, the control group was given time to reread and study the text while the experimental group was allotted time to write summaries on the text content. Next, both groups were given the same 10 question multiple choice test.

The results of the study proved while learners compose a summary they must both conduct a review of the topic schema and make decisions about pertinent data to use in their summary. Therefore it is concluded that the cognitive process involved in writing a summary is similar to that which is used to recall text content. Additional conclusions were made regarding the testing procedures. Since students in the experimental group were instructed to use the summarizing technique as a means of retaining content but then asked to recall the data via a different mode (multiple choice test) it has been noted that the students were able to also transform the text material into usable information. Here again using a more advanced cognitive process than the control group. (Head, Readence & Buss, 1989)

The second 1989 study discussed here was done by Flood, Mathison, Lapp and Singer. Although this research varies from the others listed within this section, it is relevant to comprehension in text books therefore it has been included.

Forty-four graduate students were placed into four groups who received various types of instruction. Among these groups, one had an instructor who assigned text reading in addition to completing ten reading tasks with the students. Five of the ten are as follows:

1. previewing the chapter before reading is done
2. supplying students with the prior knowledge needed to comprehend the text
3. logically sequencing the material
4. summarizing the material
5. supporting the material with visual aids

The results of this experiment proved that the students, who received the instruction from the teacher above had significantly higher comprehension scores on chapter content than the other groups. It was suggested in the conclusion of this test that instructions via a text should include interaction between the text, the reading, and the teacher. Many of these interactions, guided by the instructors, were types of writing activities which challenge the cognitive processes used to translate the text into usable information. (Flood, Mathison, Lapp & Singer, 1989)

Studies Supporting the Non-Effects of Writing on Comprehension

Only a few studies reported no positive correlations between directed writing activities and reading comprehension. One such

study was done by Oehlkers in a year long test on first grade children. One group was taught with a language experience approach as their reading instruction. The other group was taught with a "creative writing" program as their reading instruction. Oehlkers found no significant difference in the reading level of the two groups at the end of their first grade year (Oehlkers 1971 in Stotsky 1983).

A second study was done by Smith, Jensen, and Dillingofski with fourth graders. The fourth graders were placed into two groups. The experimental group was assigned to complete either a creative or a non-creative writing assignment after reading a short selection. The control group was assigned no writing assignment, just a simple reading test. On a short comprehension assessment administered to each group, there were no significant differences in test scores (Smith, Jensen, and Dallingofski, 1971 in Stotsky 1983).

Belanger's review of research in this field, summarized some noteworthy results. Firstly, he notes that two-thirds of the studies completed on sentence-combining methods to improve reading comprehension found no significant differences in study groups. Additionally, it was stated that most of these successful studies were conducted on the elementary level.

Belanger also concludes in his research review that the reading-writing relationship appears to have different attributes at various grade levels. Younger subjects, going through a rapidly growing language process, score higher than older students with a developed process of comprehending. Here he

supports the theory of comprehension as a developmental process (Belanger 1987).

Literature Summary

In summary of the above literature review, there are three important researched conclusions to reiterate. These findings may be vital to the results of this study.

Firstly, studies researching the effects of writing on reading comprehension are theoretical in nature. Many studies have examined the outcomes of individual writing treatments rather than the overall manner in which the two language process are related to each other (Belanger 1987). By comparison, researchers have studies the single components of the writing/reading connection rather than looking at the "total picture" of the processes involved to combine the two.

Secondly, to summarize the conclusions of Stotsky (1983) on the effects of writing on reading. According to Stotsky, almost all the studies that used writing tasks to enhance reading material, proved to significantly increase reading comprehension or retention of content material. Although the testing procedures may have varied from standardized tests, achievement tests or comprehension tests on specific material read, gains were evident in all types of assessment procedures.

Thirdly, findings on the effects of basal programs on reading and writing were briefly mentioned by Belanger. He notes researchers have proven basal programs to influence the reading

and writing patterns of young students (Eckhoff 1985 in Belanger 1987). Additionally noted, students often imitate concrete forms from their reading to their writing such as abstracts, structural characteristics and word-level usage (Bereiter and Scardamalia 1983 in Belanger 1987). Therefore, basal programs which are not including quality literature are not giving students a choice model to imitate in their writing.

CHAPTER THREE

METHODOLOGY

This third chapter entails several subsections which include the hypothesis, operational definition, materials and instruments, procedure, design, limitations to the study and subjects.

Hypothesis

The null hypothesis of this study is as follows: there will be no significant differences in the reading comprehension CTBS scores of students taught reading with a basal program compared to those taught with an integrated reading and writing program.

Operational Definitions

Instructional Methods:

method for group A = reading basal program is defined as a comprehensive set of materials developed to guide teachers with a systematic mode of teaching reading.

method for group B = combined reading and writing program is defined as an integration of writing assignments with any fiction or nonfiction text.

Test Scores:

a standardized score assigned for a correct number of responses.

test = the reading comprehension subtest of the Comprehensive Test of Basic Skills (CTBS) raw scores

Form U Level F Grade 4

This variable will be treated as an interval scale of measurement.

Materials and Instruments

This study used the reading comprehension subtest of the Comprehensive Test of Basic Skills, Form U Level F. The pretest consisted of 30 multiple- choice items, the posttest includes 45 multiple-choice items for which 40 minutes is allotted for completion. The CTBS is a norm-referenced, standardized achievement test. These tests have a reliability coefficient of .92 (Grade 3 Pretest) and .94 (Grade 4 Posttest) on the Kuder-Richardson formula 20 (KR20), measurement of internal consistency.

The basal program used in this study was level 10 of the Harcourt Brace Jovanovich (HBJ) Basal Reading Program (Eagle edition).

The writing assignments used in this study were teacher prepared, based on comprehension skills required by the district's reading curriculum objectives. Reading materials consisted of a variety of grade level trade books.

Procedure

The school administrator for the school being used in this study has given permission for this study to be conducted. Permission was also given to access student files for third and fourth grade testing scores.

This researcher has followed the Code of Ethics as written

be James H. McMillan and Sally Schumacher in the 2nd edition of Research In Education (McMillan & Schumacher, 1989, pages 196 through 200).

Subjects in groups A and B were pretested in the May of their third grade year. As a result of these scores both groups were determined to be equivalent in academic abilities.

Students in group A were taught with the use of a basal reading program. They covered level 9 and 10 of the HBJ Basal Reading Program in the fourth grade from September to June. Subjects in this group received 1.5 hours of process writing per week, unrelated to any text reading from the basal or a content text book.

Students in group B were taught with a combined reading and writing program. They also covered level 9 and 10 of the HBJ Basal Reading Program in the fourth grade from September to June. Subjects in this group received 2.5 hours of process writing per week. In addition subjects were assigned writing tasks based on reading from the basal text, content area text and trade books. One of the following tasks were assigned on a daily basis:

1. develop a story web, outline, map
2. sequence events
3. state topic, main idea, details of a text
4. describe an event, mood, setting of a story
5. restate problem, plot, story line
6. state cause and effects
7. predict outcomes

8. discuss author's style and use of figurative language
9. analyze characters
10. state a critical reaction or opinion to an issue

Subjects in both groups were tested in May of their fourth grade year. Teachers familiar with the Comprehensive Test of Basic Skills (CTBS) administered the test. The reading comprehension subtest of the CTBS uses the following components to measure comprehension:

1. passage details
2. character analysis
3. main idea
4. generalizations
5. written forms
6. writing techniques

Data was collected from the results of the CTBS scores.

Design

The design of this study is a quasi-experimental design. The pretest/posttest design will compare two groups that will receive different treatments in reading instruction. The design is as follows:

Group	Pretest	Intervention	Posttest
A	O_1 ---------->		O_2
B	O_1 ---------->	X ---------->	O_2
	---------->		

TIME (9 months)

Legend

A = control group

B = experimental group

X = applied intervention

O = standardized test

This design took nine months to complete. Anaylsis of varience for this study is an independent t-test with a probability level set at .05 ($P \leq .05$). The following formula was used to calculate the t-test statistic:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_{\bar{x}1} - \bar{x}_2}$$

Limitations to the Study

This study was limited to two specific groups of fourth grade students. The results of this study should not be generalized to a similar population. Differences between the subjects in the groups may have altered group compositions which could have varied the outcome of the results. Other limitations to this study include prescribed constants which the researcher has no control over such as the curriculum being taught and the administration of the school and district. Furthermore, although gender and race of the subjects are constants actions of 9, 10, and 11 year olds can become inevitable variables. Some subjects in this study were involved in drastic family problems over the nine month period which effected their over all performance. Other uncontrollable conditions include the testing environment. The teacher of the control group was absent two weeks prior to and on the day of the testing. Although the CTBS was administered on the same day to both groups the testing environments differed with unavoidable distractions.

Subjects

There were two fourth grade classes of students for this study, both contained 20 students. These classes were combiled of an equal number of girls and boys as well as racial background. They were also composed of a balanced level of high, middle, and low readers. Of the total 40 students, 24 students

were boys (60%) and 16 students were girls (40%). Of the total 40 subjects, 21 of the students were white (52%) and 19 were minority (48%). These students come from both low-middle class and middle class families. The subjects are fourth grade students from the same public elementary school. This school is part of a coastal urban area of New England. This city is approximately 50 miles north of New York City. The school demographics are a combination of 54% white and 46% minority students, making a school population of 482 students. Similiarly, the student population of 9,200 in the city's school system is made up of 56% white and 44% minority students.

CHAPTER FOUR

RESULTS

This chapter includes the statistical techniques and data used in this study with a brief explanation of the results. Detailed statistical analysis of the results can be found in the appendix of this paper.

The following analysis on both the pre and posttests were done using the raw scores of the CTBS Reading Comprehension subtests. All data was collected from student permanent records in June of their fourth grade year.

A preliminary analysis of the data within each class defined the two groups as equivalent. Results of the pretest (possible score of 30) shows that group A ($n = 20$) scored a mean of 20.45 while group B ($n = 20$) had a mean of 26.35. Results of an independent t-test showed a t-statistic of 0.73 at $P \leq .05$ df=38. This indicates there was no significant difference between the two classes at the beginning of this study. These results are presented in table X.

Table X - Pretest Results

Group A Control Group	Group B Experimental Group
$\bar{X}_1 = 20.45$	$\bar{X}_2 = 26.35$
$n_1 = 20$	$n_2 = 20$
$\sum x_1^2 = 9909$	$\sum x_2^2 = 14{,}051$

t-test calculation data:

$s = 25.11$

$S_{\bar{x}_1 - \bar{x}_2} = 8.04$

$t = 0.73$

The critical value of the t-statistic at df(38) at $P \leq .05$ for a two-tailed test is 2.021 according to McMillian and Schumacher page 356 (1989).

A posttest analysis of data was done on the two groups after 9 months of different treatment. The results of the posttest (possible score of 45) shows that group A scored a mean of 21.7 while group B differed with a mean of 31.4. No significant difference was found between group A and B as a result of an independent t-test, $t = 1.04$, $P \leq .05$, $df=38$. The results of the post treatment tests are indicated in table Y.

Table Y - Posttest Results

Group A Control Group			Group B Experimental Group		
$\bar{X}_1$	=	21.70	$\bar{X}_2$	=	31.40
n_1	=	20	n_2	=	20
$\sum x_1^2$	=	11,564	$\sum x_2^2$	=	20,780

t-test calculation data:

$s = 29.17$

$S_{\bar{x}1} - \bar{x}_2 = 9.34$

$t = 1.04$

As the results above indicate, the t-test statistic of 1.04 with df=38 is not significantly different using the critical values table of the t-statistic at $P \leq .05$ of 2.021 from McMillian and Schumacher page 356 (1989). Therefore the null hypothesis of this study is accepted. There is no significant difference in reading comprehension of students taught reading with a basal program compared to students taught with an integrated reading and writing program.

CHAPTER FIVE

DISCUSSION, IMPLICATIONS, CONCLUSIONS

The results of this study show there is no significant difference between students taught reading with a basal and those taught with a reading writing integration. Although the aim of this study was not obtained, many factors that may have effected its outcome will be discussed. Secondly, implications for further studies will also be given to foster additional educational growth. Lastly, this chapter will close with some conclusions for thought prompted by this study.

Discussion

The major aim of this study was intended to determine if there is a need to supplement a basal reading program with writing activities. At it has already been proven in the previous chapter that under the conditions of this study comprehension scores are not higher when students are taught with a basal program compared to an integrated program.

Many external limitations arose during this study which may have harmed the outcome of the results. Firstly, the subject's attitudes became a factor as the students became aware of the two different classroom teaching styles. Members of the constant

group often expressed a dislike to their teacher's methods of using only the basal. Contrarily, some students from the experimental group voiced a disapproved of teacher chosen trade books which were not required reading by the other teacher. Secondly, this researcher did not have control of external family obligations. The unavoidable absence of the control teacher for two weeks prior to the testing changed the atmosphere of both classes which during normal conditions would be a relatively calm period. Besides this distraction was the additional absence of the control teacher on the testing day. The class was administered the CTBS by an other staff member with whom they were familiar with but overall class behavior was not normal. A third external factor to this study was the subjects' personal problems which surfaced over the nine month period. Recalling the make-up of these subjects, 52% were white and 48% were of a minority background all mostly from low-middle to middle-class families. These classes contained student numbers above the school average for students from one parent households. These factors all lead to many home problems which resulted in a decline of their school work.

For further analysis on the results of this study the testing tool used must be discussed. It can not be assumed that some type of growth did not occur in the experimental group. The near 10 point difference in the class means (A = 21.7, and B = 31.4) suggests a higher score of results from the experimental group. First we need to consider the HBJ program as well as the integrated program which does not foster periodic multiple-choice

tests. Therefore, the May testing date was the first time these classes were asked to complete a test of this format within the year's time. Students in both groups had trouble following the format of such a test. Secondly, an extensive amount of growth in comprehension skills may have occurred over the year in the experimental group however it may not have been measured accurately by the CTBS comprehension subtest. The students in the experimental group were in the practice of writing summaries, story outlines, describing characters, settings and moods as well as comparing author's styles. Of these activities none can be transferred to a four choice testing format. It is the suggestion of this researcher that the testing instrument used was not appropriate for measuring actual skills that were taught. This suggestion was also made by Head (1989). He argues that students are not able to transfer the proper schema from the writing cognitive process to the multiple-choice questions. In fact he continues to state that these two processes represent different models of comprehension. This issue however was not intended to be the aim of this study.

For added discussion, we need to consider the age group and stage of language development of the subjects. Since the reading and writing process are both language oriented most often additional time spent on one will foster the other. The amount of growth to the language process then depends on the age of the subject. As Belanger (1987) concludes in his research, younger subjects going through a rapidly growing language process score higher than older students would with an already developed

process of comprehending. He views the reading-writing relationship to have different attributes at various grade levels. It is the recommendation of this researcher that the subjects used in this study had already had a firm comprehending process by the ages of 9, 10, and 11. It is proposed that the same study done with younger subjects would show a significant testing difference.

Implications For Further Studies

The studies explored by this researcher as well as this studies outcome lead the way for many directions of further research.

First, as was discussed in the previous subheading. Researchers need to look at the language process as developmental. Systems would benefit from studies on the growth of the language process at various grade levels. This would give school systems a focal point for added beneficial instruction.

Secondly, as was also discussed in the above subheading. Educators need to become more aware of the relationship reading and writing skills have on each other. Few studies done on these two disciplines ever look at them as an integrated working unit.

Thirdly, many researchers have examined the effects of individual writing treatments such as notetaking, summary writing, outlining or story mapping. But few researchers have examined the total combination of writing skills as this researcher has attempted to do. As educators, the processes must

be looked upon as one schema to integrate the whole language process to students.

Fourth, better measuring instruments are needed to test reading comprehension. More studies need to be done to determine accurate ways of measuring reading understanding and transferal of knowledge. In addition, motivational tests need to be either written or discovered that keeps a child's prior knowledge and interests in mind. Standardized testing needs to become a more pleasurable interesting school task rather than the horrid tedious job it has become.

Lastly, many studies have been done on the effects of various writing techniques have on reading. Contrarily, little work has been done on the effects the reading process has on writing skills. Is a good reader always a strong writer? Does the language process work in the reverse? This researcher located a few studies which touched on this but again not dealt with the writing process as a whole array of tasks.

The use of well controlled research in any of the above areas could help guide curriculum development in all areas of language. The many avenues to be discovered here lead to an enthusiasm for continuing changing waves for the future.

Conclusions

As a result of this study I feel there is a relevance to be brought out. Even though the statistical results of this study did not prove integrated reading and writing to be a more

effective teaching method that a basal reading program, I believe the students of the experimental group grew more in their language processes. The trade books fostered, continuity of lessons and transferal of previous knowledge I had not dealt with before in basal texts. Using literature in the classroom also leaves students to seek out other books by the same author or on similar topics which is rarely done with the basal stories. Lastly, as the experimental teacher, I witnessed a class-wide excitement about reading which soon developed into a class of self-motivated readers. So even though the classes resulted in no significant difference, I feel the motivational learning factors of the integrated program far out measured the basal's historical approach.

As a classroom teacher I will continue to lean towards a literature based style of teaching reading. Also, I intend to speak among my colleagues persuading them away from their secure basal teacher books into the world of writing and literature. It has been in the past and will continue to be my plea to my school administrator to put basal workbook money into sets of quality literature for the classrooms. Lastly, within my school and district I plan to use this study to help clarify the questions and silence the controversies regarding the new teaching styles of the nineties.

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APPENDIX

Statistical Analysis

This section includes the formulas used in this study. The statistical analysis was done using The Comprehensive Test of Basic Skills comprehension subtest. The raw data was used in both the pretest and posttests to calculate an independent t-test ($P \leq .05$).

The formula for calculating the t-test statistic is:

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_{\bar{x}1} - \bar{x}_2}$$

where

t is the t-test statistic

$\bar{X}_1$ is the mean of group A

$\bar{X}_2$ is the mean of group B

$S_{\bar{x}1} - \bar{x}_2$ is the standard error of the difference in means

The following steps were performed on the below raw scores to calculate the pretest data:

Pretest Scores

	Group A Control Group		Group B Experimental Group	
	X_1	X_1^2	X_2	X_2^2
1.	8	64	18	324
2.	9	81	22	484
3.	13	169	23	529
4.	13	169	24	576
5.	16	259	25	625
6.	16	259	25	625
7.	19	361	26	676
8.	20	400	26	676
9.	21	441	27	729
10.	21	441	27	729
11.	22	484	27	729
12	22	484	27	729
13.	22	484	27	729
14.	25	625	28	784
15.	26	676	28	784
16.	26	676	29	841
17.	26	676	29	841
18.	28	784	29	841
19.	29	841	30	900
20.	30	900	30	900

$\sum X_1 = 409$ $\sum X_1^2 = 9909$ $\sum X_2 = 527$ $\sum X_2^2 = 14{,}051$

$n = 20$ $n = 20$

$\bar{X}_1 = 20.45$ $\bar{X}_2 = 26.35$

* Note: Maximum Score = 30

Step 1:

$$s = \sqrt{\frac{9{,}909 + 14{,}051}{19 + 19}} = \sqrt{630.5} = 25.11$$

Step 2:

$$S_{\bar{x}1} - \bar{x}_2 = 25.11 \sqrt{1/20 + 1/20} = 25.11 \sqrt{1/10} = (25.11)(.32) = 8.04$$

Step 3:

$$t = \frac{26.35 - 20.45}{8.04} = \frac{5.90}{8.04} = 0.73$$

The following steps were performed on the below raw scores to calculate the posttest data:

Posttest Scores

	Group A Control Group		Group B Experimental Group	
	X_1	X_1^2	X_2	X_2^2
1.	5	25	18	324
2.	6	36	19	361
3.	10	100	24	526
4.	12	144	24	576
5.	13	169	25	625
6.	14	196	25	625
7.	14	196	25	625
8.	15	225	29	841
9.	18	324	29	841
10.	20	400	32	1024
11.	21	441	33	1089
12	26	676	35	1225
13.	26	676	36	1296
14.	27	729	36	1296
15.	30	900	37	1369
16.	32	1024	39	1521
17.	33	1089	39	1521
18.	35	1225	40	1600
19.	35	1225	41	1681
20.	42	1764	42	1764

$\sum X_1 = 434$ $\sum X_1^2 = 11,564$ $\sum X_2 = 628$ $\sum X_2^2 = 20,780$

$n = 20$ $n = 20$

$\bar{X}_1 = 21.70$ $\bar{X}_2 = 31.40$

* Note: Maximum Score = 45

Step 1:

$$s = \sqrt{\frac{11,564 + 20,780}{19 + 19}} = \sqrt{851.16} = 29.17$$

Step 2:

$$S_{\bar{x}1} - \bar{x}_2 = 29.17 \sqrt{1/20 + 1/20} = 29.17 \sqrt{1/10} = (29.17)(.32) = 9.34$$

Step 3:

$$t = \frac{31.40 - 21.70}{9.34} = \frac{9.70}{9.34} = 1.04$$

Curriculum Objectives

Tasks of the 4th grade reading curriculum include the students' abilities to do the following:

1. Identify a stated main idea (topic sentence).
2. Identify a stated detail.
3. Identify and use a stated sequence.
4. Identify a plot (storyline).
5. Identify a cause and effect statement.
6. Identify character traits.
7. Infer an author's purpose.
8. Infer a main idea.
9. Infer a main topic.
10. Infer a detail.
11. Infer a sequence.
12. Make reasonable predictions about the content of text as yet unread.
13. Recognize statements of facts and statements of opinions.
14. Recognize events in future, present and past tenses.
15. Judge validity or the authority of evidence.
16. Judge the consistency, relevance, and logical order of statements in a passage.
17. Locate information in a schedule, chart, map or graph.
18. Locate information using the table of contents.

Basal Reader Scope and Sequence

The following are 4th grade reading objectives taught for mastery and tested in Harcourt Brace Jovanovich (HBJ) Basal Reading Program for level 10 for comprehension.

1. to relate word order to sentence meaning
2. to use literal comprehension skills
3. to use inferential comprehension skills
4. to recognize cause and effect relationships
5. to infer: drawing conclusions
6. to infer: predicting outcomes
7. to recognize a sequence of events
8. to recognize multiply ideas in sentences
9. to recognize multiple meanings of words
10. to recognize synonyms and antonyms
11. to use context clues to meaning
12. to identify words that signal cause and effect relationships
13. to identify pronouns and their antecedents
14. to follow written directions
15. to recognize time order
16. to recognize main idea
17. to distinguish between main idea and details
18. to identify details that support the main idea
19. to distinguish between fact and opinion
20. to identify the topic of a paragraph or selection
21. to distinguish between topic and main idea